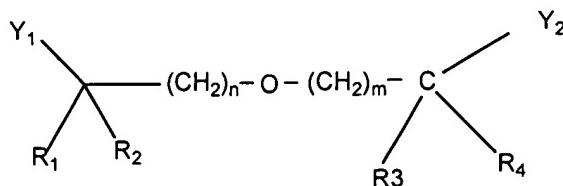


CLAIMS

We claim:

1. A method for lowering plasma CRP levels comprising administering to a
5 mammal, in need thereof,
an effective amount of a dialkyl ether, substituted alkyl, substituted
aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone,
substituted-alkyl, or a pharmaceutically acceptable salt of the dialkyl ether,
substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether,
10 substituted dialkyl ketone, or substituted-alkyl:
or a pharmaceutical composition of the dialkyl ether, substituted
alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted
dialkyl ketone, substituted-alkyl, or a pharmaceutically acceptable salt of
the dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted
dialkyl thioether, substituted dialkyl ketone, or substituted-alkyl.
15
2. A method according to Claim 1 wherein the mammal is a human.
3. A method according to Claim 2 wherein the compound inhibits
20 proinflammatory cytokine induced CRP production.
4. A method for lowering plasma CRP levels comprising administering to a
mammal, in need thereof, an effective amount of a compound of the
formula:
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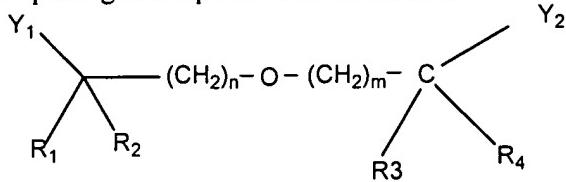
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wherein

- n and m independently are integers from 2 to 9;
30 R₁, R₂, R₃, and R₄ independently are C₁-C₆ alkyl, C₂-C₆ alkenyl,
C₂-C₆ alkynyl, and R₁ and R₂ together with the carbon to which they are
attached, and R₃ and R₄ together with the carbon to which they are
attached, independently can complete a carbocyclic ring having from 3 to
6 carbons;

Y₁ and Y₂ independently are COOH, CHO, tetrazole, and COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, substituted alkyl, alkenyl, or alkynyl; and where the alkyl, alkenyl, and alkynyl groups may be substituted with one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl; or a pharmaceutically acceptable salt thereof.

5. 5. A method according to Claim 4 wherein the mammal is a human.
- 10 6. A method according to Claim 5 wherein the compound inhibits proinflammatory cytokine induced CRP production.
7. 7. A method according to Claim 4 wherein the compound is 6,6'-oxybis(2,2-dimethylhexanoic acid) or a pharmaceutically acceptable salt thereof.
- 15 8. 8. A method according to Claim 7 wherein the mammal is a human.
9. 9. A method for lowering plasma CRP levels comprising administering to a mammal, in need thereof, an effective amount of a pharmaceutical composition comprising a compound of the formula:

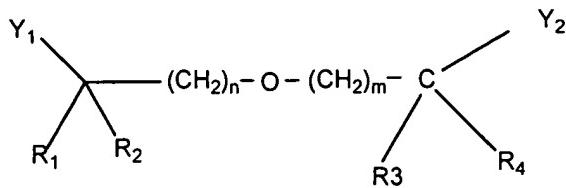


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wherein
25 n and m independently are integers from 2 to 9; R₁, R₂, R₃, and R₄ independently are C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, and R₁ and R₂ together with the carbon to which they are attached, and R₃ and R₄ together with the carbon to which they are attached, independently can complete a carbocyclic ring having from 3 to 6 carbons;
30 Y₁ and Y₂ independently are COOH, CHO, tetrazole, and COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, substituted alkyl, alkenyl, or alkynyl; and where the alkyl, alkenyl, and alkynyl groups may be substituted with

one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl,
or a pharmaceutically acceptable salt thereof;
and a pharmaceutically acceptable diluent, carrier, or excipient.

- 5 10. A method according to Claim 9 wherein the mammal is a human.
11. A method according to Claim 10 wherein the compound inhibits proinflammatory cytokine induced CRP production.
- 10 12. A method according to Claim 9 wherein the compound is 6,6'-oxybis(2,2-dimethylhexanoic acid) or a pharmaceutically acceptable salt thereof.
13. A method according to Claim 12 wherein the mammal is a human.
- 15 14. A method for reducing systemic inflammation comprising administering to a mammal, in need thereof, an effective amount of a dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, substituted-alkyl, or a pharmaceutically acceptable salt of the dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, or substituted-alkyl: or a pharmaceutical composition of the dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, substituted-alkyl, or a pharmaceutically acceptable salt of the dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, or substituted-alkyl.
- 20 25. A method according to Claim 14 wherein the mammal is a human.
15. A method according to Claim 14 wherein the mammal is a human.
- 30 16. A method according to Claim 15 wherein the compound inhibits proinflammatory cytokine induced CRP production.
17. A method for reducing systemic inflammation comprising administering to a mammal, in need thereof, an effective amount of a compound of the formula:
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wherein

n and m independently are integers from 2 to 9;

R₁, R₂, R₃, and R₄ independently are C₁-C₆ alkyl, C₂-C₆ alkenyl,

10 C₂-C₆ alkynyl, and R₁ and R₂ together with the carbon to which they are attached, and R₃ and R₄ together with the carbon to which they are attached, independently can complete a carbocyclic ring having from 3 to 6 carbons;

15 Y₁ and Y₂ independently are COOH, CHO, tetrazole, and COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl,

substituted alkyl, alkenyl, or alkynyl;

and where the alkyl, alkenyl, and alkynyl groups may be substituted with one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl, or a pharmaceutically acceptable salt thereof.

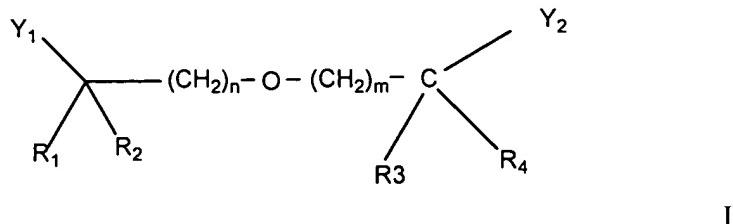
20 18. A method according to Claim 17 wherein the mammal is a human.

19. A method according to Claim 18 wherein the compound inhibits proinflammatory cytokine induced CRP production.

25 20. The method according to Claim 17 wherein the compound is 6,6'-oxybis(2,2-dimethylhexanoic acid) or a pharmaceutically acceptable salt thereof.

21. A method according to Claim 20 wherein the mammal is a human.

30 22. A method for reducing systemic inflammation comprising administering to a mammal, in need thereof, an effective amount of a pharmaceutical composition comprising a compound of the formula:



wherein

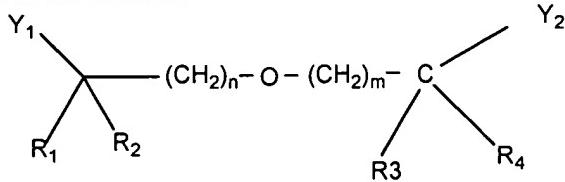
5 n and m independently are integers from 2 to 9;
R₁, R₂, R₃, and R₄ independently are C₁-C₆ alkyl, C₂-C₆ alkenyl,
C₂-C₆ alkynyl, and R₁ and R₂ together with the carbon to which they are
attached, and R₃ and R₄ together with the carbon to which they are
attached, independently can complete a carbocyclic ring having from 3 to
10 6 carbons;
Y₁ and Y₂ independently are COOH, CHO, tetrazole, and
COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl,
substituted alkyl, alkenyl, or alkynyl;
and where the alkyl, alkenyl, and alkynyl groups may be substituted with
15 one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl,
or a pharmaceutically acceptable salt thereof;
and a pharmaceutically acceptable diluent, carrier, or excipient.

23. A method according to Claim 22 wherein the mammal is a human.
20 24. A method according to Claim 23 wherein the compound inhibits
proinflammatory cytokine induced CRP production.
25 25. A method according to Claim 22 wherein the compound is
6,6'-oxybis(2,2-dimethylhexanoic acid) or a pharmaceutically acceptable
salt thereof.
26. A method according to Claim 25 wherein the mammal is a human.
30 27. A method of inhibiting proinflammatory cytokine induced CRP production
in a mammal, in need thereof, comprising administering to the mammal;
an effective amount of a dialkyl ether, substituted alkyl, substituted
aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone,
substituted-alkyl, or a pharmaceutically acceptable salt of the dialkyl ether,

substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, or substituted-alkyl:

or a pharmaceutical composition of the dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, substituted-alkyl, or a pharmaceutically acceptable salt of the dialkyl ether, substituted alkyl, substituted aryl-alkyl, substituted dialkyl thioether, substituted dialkyl ketone, or substituted-alkyl.

- 5 28. A method according to claim 27 wherein the mammal is human.
- 10 29. A method of inhibiting proinflammatory cytokine induced CRP production in a mammal comprising administering to a mammal an effective amount of a compound of the formula:

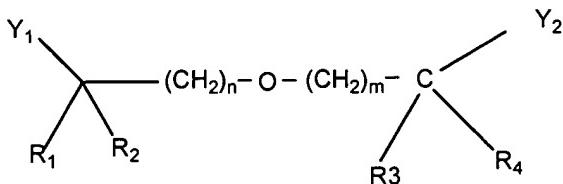


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- 15 wherein
- n and m independently are integers from 2 to 9;
R₁, R₂, R₃, and R₄ independently are C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, and R₁ and R₂ together with the carbon to which they are attached, and R₃ and R₄ together with the carbon to which they are attached, independently can complete a carbocyclic ring having from 3 to 6 carbons;
- 20 Y₁ and Y₂ independently are COOH, CHO, tetrazole, and COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, substituted alkyl, alkenyl, or alkynyl; and where the alkyl, alkenyl, and alkynyl groups may be substituted with one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl, or a pharmaceutically acceptable salt thereof.
- 25 Y₁ and Y₂ independently are COOH, CHO, tetrazole, and COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, substituted alkyl, alkenyl, or alkynyl; and where the alkyl, alkenyl, and alkynyl groups may be substituted with one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl, or a pharmaceutically acceptable salt thereof.
- 30 30. A method according to claim 29 wherein the mammal is a human.

31. A method according to Claim 29 wherein the compound is 6,6'-oxybis(2,2-dimethylhexanoic acid) or a pharmaceutically acceptable salt thereof.
- 5 32. A method according to claim 31 wherein the mammal is a human.
33. A method of inhibiting proinflammatory cytokine induced CRP production in a mammal comprising administering to a mammal an effective amount of a pharmaceutical composition comprising a compound of the formula:

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wherein
n and m independently are integers from 2 to 9;
R₁, R₂, R₃, and R₄ independently are C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, and R₁ and R₂ together with the carbon to which they are attached, and R₃ and R₄ together with the carbon to which they are attached, independently can complete a carbocyclic ring having from 3 to 6 carbons;

20

Y₁ and Y₂ independently are COOH, CHO, tetrazole, and COOR₅ where R₅ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, substituted alkyl, alkenyl, or alkynyl; and where the alkyl, alkenyl, and alkynyl groups may be substituted with one or two groups selected from halo, hydroxy, C₁-C₆ alkoxy, and phenyl, or a pharmaceutically acceptable salt thereof; and a pharmaceutically acceptable diluent, carrier, or excipient.

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34. A method of claim 33 wherein the mammal is a human.

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35. A method of claim 33 wherein the compound is 6,6'-oxybis(2,2-dimethylhexanoic acid) or a pharmaceutically acceptable salt thereof.

36. A method of claim 35 wherein the mammal is a human.